

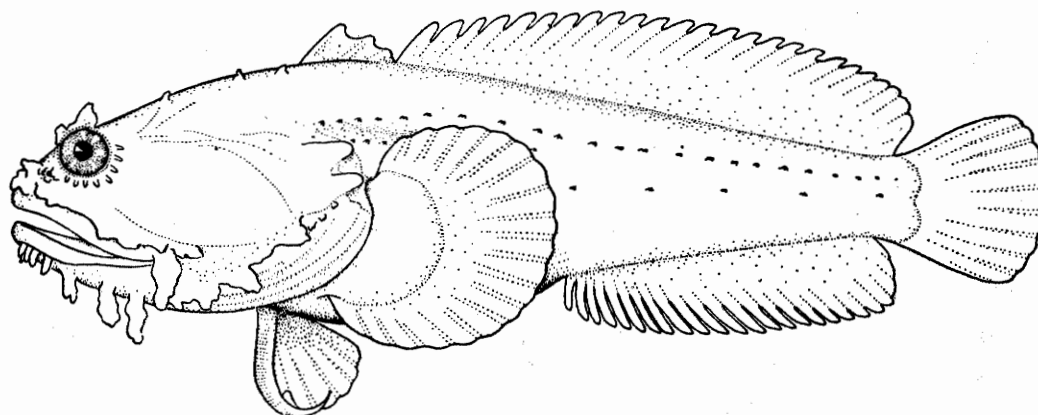
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A BIBLIOGRAPHY OF PAPERS DEALING WITH
THE OYSTER TOADFISH, OPSANUS TAU

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The following bibliography was compiled with the idea of providing the investigator with a reasonably complete index of what has been done with the toadfish, Opsanus tau, as an experimental animal. It is because of this approach that references to O. tau in faunal and distributional lists, for the most part have been omitted. The earliest papers describing the species are included for historical interest.

It is hoped that this list of investigations may serve as a stimulus to fill in the many apparent gaps in our knowledge of fish physiology and behavior.

- AGASSIZ, A. 1882. On the young stages of some osseous fishes. Proc. Amer. Arts and Sci. 17:271-303.
- ANSON, B. J. 1929. The comparative anatomy of the lips and labial villi of vertebrates. Jour. Morp. and Physiol. 47:335-414.
- AYRES, W. O. 1842. Enumeration of the fishes of Brookhaven, Long Island, with remarks upon the species observed. Boston Jour. Nat. Hist. 4:255-292.
- BEAN, T. H. 1890. Observations upon fishes of Great South Bay, Long Island, New York. 19th Report Comm. Fish. N. Y., p. 237-281.
- BIETER, R. N. 1931. The secretion pressure of the aglomerular kidney. Amer. Jour. Physiol. 97:66-68.
- _____. 1931. The action of some diuretics upon the aglomerular kidney. Jour. Pharm. and Exper. Therap. 43:399-406.
- _____. 1931. Albuminuria in glomerular and aglomerular fish. Jour. Pharm. and Exper. Therap. 43:407-412.
- _____. 1933. Excretion of phenol red by the aglomerular kidney. Proc. Soc. Exp. Biol. Med. 30:981-984.
- _____. 1933. Further studies concerning the action of diuretics upon the aglomerular kidney. Jour. Pharmacol. and Exper. Therap. 49:250-256.
- _____. 1935. The action of diuretics injected into one kidney of the aglomerular toadfish. J. Pharmacol. and Exper. Therap. 53:347-349.
- BIGELOW, H. B. and A. W. WELCH. 1925. Fishes of the Gulf of Maine. Bull. U. S. Bur. Fish 40 (pt. 1):1-567.

- _____ and W. C. SCHROEDER. 1953. Fishes of the Gulf of Maine. U. S. Fish and Wildl. Serv. Fish. Bull. 74 Vol. 53:1-575.
- BROWN, MARGARET E. (Edit.). 1957. The physiology of fishes. Vol. 1. Metabolism. Academic Press. N. Y. xiii + 447.
- BROWNE, M. J., M. W. PITTS and R. F. PITTS. 1950. Alkaline phosphatase activity in kidneys of glomerular and aglomerular marine teleosts. Biol. Bull. 99:152-156.
- BUMPUS, H. C. 1898. The breeding of animals at Woods Hole during the months June, July and August. Science 8:850-858.
- BURKENROAD, M. D. 1931. Notes on the sound-producing marine fishes of Louisiana. Copeia (1):20-28.
- CABLE, R. M. 1942. Studies on the life history of Siphodera vinaledwardsii (Linton) (Trematoda:Cryptogonimidae). Jour. Parasit. 28:407-420.
- CHANDLER, A. C. 1943. A redescription of Contracaecum habena (Linton 1900) 1934. Jour. Parasit. 29:156-157.
- CHROBOT, R. J. 1959. The feeding habits of the toadfish (Opsanus tau) based on an analysis of the contents of the stomach and intestine. Univ. Maryland MS Thesis, 35 pp., 13 tables.
- CLAPP, CORNELIA M. 1891. Some points in the development of the toadfish (Batrachus tau). Jour. Morph. 5:494-501.
- _____. 1898. Relation of the axis of the embryo to the first cleavage plane. Biol. Lectures, Mar. Biol. Lab., Woods Hole, Mass. p. 139-151.
- _____. 1898. The lateral line system of Batrachus tau. Jour. Morph. 15:223-265.
- COSTELLO, D. P., M. E. DAVIDSON, A. EGGERS, M. H. FOX, and C. HENLEY. 1957. Methods for obtaining and handling marine eggs and embryos. Mar. Biol. Lab. Woods Hole, Mass. xv+247.
- DAWSON, A. B. 1932. The reaction of the erythrocytes of vertebrates, especially fishes, to vital dyes. Biol. Bull. 63:48-72.
- _____. 1933. The relative numbers of immature erythrocytes in the circulating blood of several species of marine fishes. Biol. Bull. 64:33-43.
- DEFRISE, A. 1932. Cytophysiological studies of the nephrocytes of unisegmental aglomerular and glomerular nephrons. Anat. Rec. 54:185-195.
- DEKAY, J. E. 1842. Natural history of New York. Zoology of New York or the New York fauna. Pt. 4, Fishes p. 1-415.

- DOBRIN, M. B. 1947. Measurements of underwater noise produced by marine life. Science 105:19-23.
- _____. 1949. Recording sounds of undersea life. Trans. N. Y. Acad. Sci. 11:91-96.
- DOVEL, W. 1960. Larval development of the oyster toadfish, Opsanus tau. Ches. Sci. 1(3-4):187-195.
- EDWARDS, J. G. 1933. The renal unit in the kidney of vertebrates. Amer. Jour. Anat. 53:55-87.
- _____. 1935. The epithelium of the renal tubule in bony fish. Anat. Rec. 63:263-279.
- EHRENBAUM, E. 1905-09. Eier und Larven von fischen des Nordishes Planktons. Kiel und Leipsig 1 Teil. Lief 4, pp. 1-216, 82 fig. 1905; 2 Teil. Lief 10, pp. 217-413. 83-148 fig. 1909.
- FISH, M. P. 1954. The character and significance of sound production among fishes of the western North Atlantic. Bull. Bingh. Oceanogr. Coll. 14:1-109.
- FODDEN, J. H. 1956. Cytopathologic effects of cobalt on pancreatic islets of many species - Islands of Langerhans and cobaltous chloride. Amer. Med. Assoc. Arch. Path. 61:65-75.
- FRIZ, C. T., A. LAZAROW and S. J. COOPERSTEIN. 1960. Isolated islet tissue of fish. III. The effect of substrates and inhibitors on the oxygen uptake of pancreatic islet slices of toad fish (Opsanus tau). Biol. Bull. 119:161-168.
- GILL, T. 1907. Life histories of toadfishes (Batrachoidids) compared with weevers (Trachnids) and star-gazers (Uranoscopids). Smiths. Misc. Coll. 48:388-427.
- GOODE, G. C. 1884. Fisheries and fishery industries of the United States. Sec. 1, Natural history of useful aquatic animals. Washington.
- GRAFFLIN, A. L. 1931. Urine flow and diuresis in marine teleosts. Am. Jour. Physiol. 97:602-610.
- _____. 1931. The structure of the renal tubule of the toadfish. Bull. Johns Hopkins Hosp. 48:269-270.
- _____. 1937. The structure of the nephron in fishes. Representative types of nephron encountered; the problem of homologies among the differentiated portions of the proximal convoluted segment. Anat. Rec. 68:287-302.

- GRAY, GRACE ANN and H. E. WINN. 1961. Reproductive ecology and sound production of the toadfish, Opsanus tau. Ecol. 42(3):274-282.
- GRAY, I. E. 1947. The relation between gill surface and activity in marine fishes. Jour. Elisha Mitch. Sci. Soc. 63-108.
- _____. 1953. The relation of body weight to body surface area in marine fishes. Biol. Bull. 105:285-288.
- _____. 1954. Comparative study of the gill area of marine fishes. Biol. Bull. 107:219-225.
- _____ and F. G. HALL. 1930. Blood sugar and activity in fishes with notes on the action of insulin. Biol. Bull. 58:217-223.
- GREEN, A. A. and R. W. ROOT. 1933. The equilibrium between hemoglobin and oxygen in the blood of certain fishes. Biol. Bull. 64:383-404.
- GREEN, J. W. and J. F. HOFFMAN. A study of isotonic solutions for the erythrocytes of some marine teleosts and elasmobranchs. Biol. Bull. 105:289-295.
- GREGORY, W. K. Fish skulls. E. Lundberg, Florida 1959, pp. 1-481.
- GUDGER, E. W. 1908. Habits and life history of the toadfish (Opsanus tau). Bull. U. S. Bur. of Fish., Vol. 28, Pt. 2:1073-1109.
- HALL, F. G. 1929. The influence of oxygen tensions upon the rate of oxygen consumption in marine fishes. Amer. Jour. Physiol. 88:212-218.
- _____ and I. E. GRAY. 1929. The hemoglobin concentration of the blood of marine fishes. Jour. Biol. Chem. 81:589-594.
- HAYWOOD, C. 1939. The permeability of the toadfish liver to inulin. Biol. Bull 77: 332-333.
- _____. 1946. The passage of inulin through the liver of the toadfish, with and without choleretics. Jour. Cell. and Comp. Physiol. 28:381-396.
- HILDEBRAND, S. F. and W. C. SCHROEDER. 1938. Fishes of Chesapeake Bay. Bull. U. S. Bur. Fish., Vol. 43, Pt. 1, 1-388.
- KUDO, R. R. 1944. Morphology and development of Nosema notabilis Kudo, parasitic in Sphaerospora polymorpha Davis, a parasite of Opsanus tau and O. beta. Univ. Ill. Monogr. 20:1-83.
- _____. 1941. The development of Nosema notabilis Kudo, a microsporidian, and of its host myxosporidian, Sphaerospora polymorpha Davis, parasitic in Opsanus tau. Anat. Rec. 81: Suppl. 133.
- LAZAROW, A. and J. BERMAN. 1947. The production of diabetes in the toadfish with alloxan. Biol. Bull. 93:219.

- _____ and S. J. COOPERSTEIN. 1951. Studies on the isolated islet tissue of fish. I. The cytochrome oxidase and succinic dehydrogenase contents of normal toadfish (Opsanus tau). Biol. Bull. 100:191-198.
- _____, _____, D. K. BLOOMFIELD and C. T. FRIZ. 1957. Studies on the isolated islet tissue of fish. II. The effect of electrolytes and other factors on the oxygen uptake of pancreatic islet slices of toadfish, using the cartesian diver microrespirometer. Biol. Bull. 113:414-425.
- LEE, R. E. 1942. Pituitary function in the chromatic physiology of Opsanus tau. Biol. Bull. 83:299-300.
- LESUEUR, C. A. 1819. Notice de quelques poissons decouverts dans les lacs du haut Canada, durant l'ete de 1816. Mem. Mus. Hist. Nat. t.v., p. 148-161.
- _____. 1824. Description of two new species of the genus Batrachoides, Lacepede. Jour. Acad. Nat. Sci. Phila. Vol. III. p. 395.
- LINTON, E. 1899. Parasites of the fishes of the Woods Hole region. Bull. U. S. Fish Comm. 19:405-492.
- _____. 1904. Parasites of the fishes of Beaufort, North Carolina. Bull. U. S. Fish. Comm. 24:321-428.
- LONGLEY, J. B. 1955. Alkaline phosphatase in the kidneys of aglomerular fish. Science 122:594.
- _____. 1956. Alkaline phosphatase in kidneys of aglomerular fish. Science 123. 142-143.
- MARSHALL, E. K., JR. 1929. The aglomerular kidney of the toadfish (Opsanus tau). Bull. Johns Hopkins Hosp. 45:95-100.
- _____. 1930. A comparison of the function of the glomerular and aglomerular kidney. Am. Jour. Physiol. 94:1-10.
- _____. 1934. The comparative physiology of the kidney in relation to the ories of renal secretion. Physiol. Rev. 14:133-159.
- _____ and A. L. GRAFFLIN. 1932. The function of the proximal convoluted segment of the renal tubule. Jour. Cell. Comp. Physiol. 1:161-176.
- MCDERMOTT, J. J. and F. B. FLOWER. 1953. Preliminary studies of the common mud crabs on oyster beds of Delaware Bay. Proc. Natl. Shellfish Assoc. 1952. 47-50.

- MITCHILL, S. L. 1815. The fishes of New York described and arranged. Trans. Lit. Phil. Soc. N. Y. Vol. 1. p. 355-492.
- MONIS, B. and J. B. LONGLEY. 1955. Mucins in the epithelium of renal collecting tubules. Nature 176:741-742.
- NACE, P. 1955. Arterial blood sugar content of toadfish, intact and treated with alloxan or cortisone. Anat. Rec. 124:340.
- ODUM, E. P. 1936. Notes on the history of the germ cells in the toadfish (Opsanus tau). Jour. Elisha Mitchell Sci. Soc. 52:235-246.
- PANKRATZ, D. S. 1928. The cranial musculature of the toadfish (Opsanus tau). Jour. Morph. Physiol. 45:209-231.
- _____. 1930. The cranial-nerve components in the toadfish (Opsanus tau.) Jour. Comp. Neurol. 50:247-286.
- PLATT, J. B. 1891. Further contribution to the morphology of the vertebrate head. Anat. Anz. 6:251-265.
- PROSSER, C. LADD. 1950. Comparative Animal Physiology. Ed., W. B. Saunders Co., Phil. pp. 1-888.
- RAFINESQUE, C. S. 1818. Description of two new genera of North American fishes, Opsanus and Notropis. Amer. Monthly Mag. Vol. II, p. 204.
- ROBINSON, P. F., C. G. WILBER and J. HUNN. 1960. Organ-body weight relationships in the toadfish, Opsanus tau. Ches. Sci. 1:120-122.
- ROOT, R. W. 1931. The respiratory function of the blood of marine fishes. Biol. Bull. 61:427-456.
- _____. and W. ETKIN. 1937. Effect of thyroxine on the oxygen consumption of the toadfish. Proc. Soc. Exp. Biol. Med. 37:174-175.
- _____. and A. A. GREEN. 1934. The effect of acidity on the carbon monoxide-combining power of hemoglobin in the blood of marine fishes. Jour. Biol. Chem. 106:545-552.
- RYDER, J. A. 1886. Preliminary notice of the development of the toadfish, Batrachus tau. Bull. U. S. Fish. Comm. 6:4-8.
- _____. 1886. The development of the toadfish. Amer. Nat. 20:77-80.

- _____. 1890. The functions and histology of the yolk-sac of the young toadfish (Batrachus tau). Proc. Acad. Nat. Sci. Phila. 42:402-408.
- SAFFORD, V. 1940. Asphyxiation of marine fish with and without CO₂ and its effect on the gas content of the swim-bladder. Jour. Cell. Comp. Physiol. 16:165-173.
- SCHULTZ, L. P. and E. D. REID. 1937. The American Atlantic toadfishes of the genus Opsanus. Copeia (4):211-212.
- SHANNON, J. A. 1938. Renal excretion of exogenous creatinine in the aglomerular toadfish, Opsanus tau. Proc. Soc. Exptl. Biol. Med. 38:245-248.
- _____. 1938. The renal excretion of phenol red by the aglomerular fishes Opsanus tau and Lophius piscatorius. Jour. Cell. Comp. Physiol. 11: 315-323.
- SINK, E. W. 1912. The origin of the germ cells in the toadfish (Opsanus tau). Mich. Acad. Sci. Rept. #14, 212-217.
- SORENSEN, W. 1884. Om Lydorganer hos Fiske. En physiologisk og comparative-anatomiske Undersgelse. Kjbenhavn: 245.
- SPECTOR, W. S. (Edit.). 1956. Handbook of biological data. W. B. Saunders Co., Phila. xxxvi+584.
- STORER, D. H. 1867. A history of the fishes of Massachusetts. Mem. Amer. Acad. Arts and Sci. 5:251-296.
- SUMNER, F. B. 1903. A study of early fish development. Archiv für Entwicklungsmechanik der Organismen. 17(1):92-149.
- TAFT, C. H. 1940. Local action of quitenine on the skin and fascia of various vertebrates. Bull. John-Sealy Hosp. and Univ. of Texas Med. School 2:No. 3.
- _____ and J. A. PLACE. 1944. The comparative effects of the subcutaneous injection of quitenine on the kidneys of glomerular and aglomerular fish. Texas Repts. Biol. and Med. 2:61-76.
- _____ and _____. 1946. The action of quitenine on the livers of Opsanus tau and Tautoga onitis. Texas Repts. Biol. and Med. 4:406-413.
- TAVOLGA, W. N. 1958. Underwater sounds produced by two species of toadfish, Opsanus tau and Opsanus beta. Bull. Mar. Sci. Gulf and Carib. 8:278-284.
- _____. 1960. Foghorn sounds beneath the sea. Nat. Hist. 69-44-50.

- _____. 1960. Sound, production and underwater communication in fishes. In: Animal Sounds and Communication, Amer. Inst. Biol. Sci. Publ. No. 7: 93-136.
- TOTH, L. A. 1939. Renal and vascular responses to epinephrine injections in glomerular and aglomerular fish. Amer. Jour. Physiol. 126:347-353.
- TOWER, R. W. 1908. The production of sound in the drumfishes, the sea robin and the toadfish. Ann. N. Y. Acad. Sci. 18:149-172.
- TRACY, H. C. 1909. Annotated list of fishes known to inhabit the waters of Rhode Island. 40th Ann. Rept. Rhode Island Comm. Inland Fish. 35-176.
- _____. 1925. Relations of carbon dioxide to the spontaneous movements in the larvae of Opsanus tau. Biol. Bull. 48:408-431.
- _____. 1926. Development of motility and behavior reactions in the toadfish (Opsanus tau). Jour. Comp. Neurol. 40:253-370.
- _____. 1959. Stages in the development of the anatomy of motility of the toadfish (Opsanus tau). Jour. Comp. Neurol. 111:27-81.
- VERNBERG, J. F. 1954. The respiratory metabolism of tissues of marine teleosts in relation to activity and body size. Biol. Bull. 106:360-370.
- _____ and I. E. GRAY. 1953. A comparative study of the respiratory metabolism of excised brain tissue of marine teleosts. Biol. Bull. 104:445-449.
- WALLACE, L. B. 1898. The germ ring in the egg of the toadfish (Batrachus tau). Jour. Morph. 15:9-16.
- WESTMAN, J. R. 1959. Principal fishes of the middle Atlantic Coast. Sport Fishing Inst. Publ. 2 pp.
- WILBER, C. G. 1958. Some physiological characteristics of the toadfish heart. Anat. Rec. 132(3):517.
- _____ and P. F. ROBINSON. 1960. The correlation of length, weight and girth in the toadfish, Opsanus tau. Ches. Sci. 1:122-123, 1960.
- WILMER, H. A. 1944. Renal phosphatase. The correlation between the functional activity of the renal tubule and its phosphatase content. Arch. Path. 37: 227-237.

WITTENBERG, J. B. 1961. The secretion of oxygen into the swimbladder of the fish. I. The transport of molecular oxygen. Jour. Gen. Physiol. 44: 521-526.

_____ and B. A. WITTENBERG. 1961. The secretion of oxygen into the swimbladder of fish. II. The simultaneous transport of carbon monoxide and oxygen. Jour. Gen. Physiol. 44:527-542.

YARROW, H. C. 1877. Notes on the natural history of Fort Macon, N. C. and vicinity. Proc. Acad. Nat. Sci. Phila. 29:203-218.